



The Relationship between Individual Factor and Risk of Low Back Pain on Broomstick Makers in Silau Padang Village, Serdang Bedagai Regency

Muhraza Siddiq, Gerry Silaban, Nurmaini

Faculty of Public Health, Universitas Sumatera Utara, Medan, Indonesia

Email: muhraza.siddiq@gmail.com

Abstract:

Low Back Pain (LBP) is pain in the lower back originating from the spinal area (lower back), muscles, nerves, tendons, joints and cartilage. Individual risk factor for LBP include years of service, age, gender, work attitude and smoking habits. This study aims to determine the relationship between individual factor and risk of Low Back Pain of broomstick makers in Silau Padang village, Serdang Bedagai Regency. This type of research was an observational study with cross-sectional design. The population in this study was amounted to 30 people with sampling techniques using a total sampling of 30 people. The analysis used was Chi-Square with a significance level $\alpha = 0.05$, the data collection method used was a questionnaire. This study found individual factor associated with LBP risk were age (p score = 0.009, p score < 0.05) and work attitude (p score = 0.01, p score < 0.05). While the length of work (p score = 0.07), gender (p score = 0.1) and smoking habits (p score = 0.07) are not related to LBP risk (p score > 0.05). Only work attitudes were associated with LBP risk, so interventions were needed in the form of counseling to improve the work attitude of broomstick makers in Silau Padang Village, Serdang Bedagai Regency.

Keywords:

individual factor; risk of low back pain

I. Introduction

Informal workers in urban or rural areas have almost the same problems namely security and health problems. Informal sector workers generally do not have a safe work environment and lack welfare facilities. According to global data about 2 million people die each year related to their work (ILO, 2013). BPJS Employment recorded the number of work accidents in 2017 reported as many as 123,041 cases, while in 2018 there was an increase of 173,105 cases (BPJS, 2018).

Based on estimates of the International Labor Organization (ILO), 2.78 million workers die every year. Around 86.3% (2.4 million workers) of them died due to occupational diseases (PAK), while around 13.7% (380,000 workers) died from work-related accidents (ILO, 2018). Research from the Bureau of Labor Statistics (BLS) in 2013 that mentioned cases of MSDS (musculoskeletal disorders) accounted for 33% of all cases of injury and disease (OSHA, 2017).

Low Back Pain (LBP) is pain in the lower back from the spinal region (lower back), muscles, nerves, tendons, joints and cartilage (Suma'mur, 2009). According to Andini's (2015) research on "Risk Factors of Low Back Pain in Workers" states the risk factors for LBP occurrence in workers consist of personal factors, work factors and environmental factors. Personal factors are work time, work period, smoking, education status, income, activity and trauma. Work factors consist of workload, work position, repetition and duration while environmental factors consist of noise and vibration throughout the body.

Sulaeman's research (2015) states that there is no relationship between sex, work experience, body mass index (BMI), smoking behavior and exercise habits with LBP events. Factors affecting LBP events are age, years of service and level of back exposure.

According to Mentari et al (2020) in Public Works Department of Medan when the study of people with impaired lung function restrictive have such complaints often feel short of breath when working, often have a persistent cough and often feel chest pain. This is in line with Khumaidah (2009), exposure to long and frequent respiratory complaints can cause high against the risks of obstructive lung disease.

According to Riningrum (2016) in his research stating that the cause of LBP is influenced by attitudes and years of service. This is because the attitude of sitting with a bent position and bowing too long in the long term can cause the muscles to become me and will damage soft tissue. The wrong body position always sits, creating abnormal pressure from the tissues, causing pain. The pressure of the disc is greater in the sitting position upright than in the standing position and becomes even greater in the sitting position with the body bending forward.

Research conducted by Samara (2005) states that workers who sit static 91-300 minutes have proven to be a risk factor for LBP. This results in the longer a person sits because of muscle tension and ligament tension, especially the longitudinal is posior longitudinal ligament increases, especially with slouching.

The broomstick makers is one of the informal jobs where every stage of the process starts from collecting raw materials namely oil palm leaves taken from the PTPN 3 Gunung Pamela plantation area or from oil palm plantations owned by the community itself, then the process of transportation from the garden to the house using a bicycle motorcycle. Furthermore, the focus of this research is at the stage of the process of cleaning the leaf bones (sticks) of palm oil leaves which the process is done by sitting with a chair or sitting on the floor without using a table as a tool, usually the workers do this cleaning at home or in plantation so that in this process there can be a risk of LBP occurring to workers, then the drying process to the sale.

According to a preliminary survey of broomstick makers in the village of Silau Padang, the risk of Low Back Pain (LBP) is very large due to the age of the workers who are on average 30 years old and work with attitudes such as bending or sitting for a long time that is 3-4 hours and working time which has exceeded 2 years. Of the 12 workers observed there were 7 people who were at risk of experiencing LBP.

Based on the above explanation the researchers are interested in knowing the relationship between individual factor and risk of Low Back Pain on broomstick makers in Silau Padang Village, Serdang Bedagai Regency.

II. Research Methods

This type of research was an observational cross sectional design that aims to determine the relationship between individual factor and LBP risk on stick makers in Silau Padang Village, Serdang Bedagai Regency. The population in this study were all broomstick makers of 30 people. The research sample consisted of 30 people with total sampling techniques. The independent variable was an individual factor (years of service, age, gender, work attitude and smoking habits) and the dependent variable was the risk of low back pain. Data collection method was a questionnaire with a statistical test using the Chi-Square test.

III. Discussion

3.1 Result

Distribution table 1. Frequency factors of individual broomstick makers in Silau Padang Village, Serdang Bedagai Regency.

Table 1. Frequency Distribution of Individual Factors of Broomstick Makers

Variable		N	%
Years of Service	2	8	26,7
	3	14	46,7
	4	8	26,7
Age	24-46	5	16,7
	47-55	6	20,0
	56-59	10	33,3
	60-64	9	30,0
Gender	Male	9	30
	Female	21	70
Work Attitude	Standard	5	16,7
	Medium	6	20
	High	19	63,3
Smoking	Yes	8	26,7
	No	22	73,3

From the above table, it can be seen that as many as 14 workers (46.7%) have worked for 3 years, the age of broomsticks maker 56 to 59 years as many as 10 people with female that is 21 people (70%) with risky work attitudes very high as many as 19 people and 22 people (73.3%) smokers. Table 2. Distribution of individual factors related to LBP risk of broomstick-makers in Silau Padang Village, Serdang Bedagai Regency.

Table 2. Distribution of Individual Factors related to LBP Risk

Individual Factors		The Risk of LBP								Score P
		Low		Standard		Medium		High		
		n	%	n	%	n	%	N	%	
Years of Service	2	0	0	2	25.0	0	0	6	75,0	0072
	3	0	0	0	0	1	7,1	13	92,9	
	4	1	12,5	0	0	2	25.0	5	62,5	
Age	24-46	1	15	1	15	1	15	2	55	0009
	47-55	0	0	0	0	0	0	5	100	
	56-59	0	0	1	15	2	12	7	73	
	60-64	0	0	0	0	0	0	9	100	
Gender	Male	1	11,1	1	11,1	2	22,2	5	55,6	0133
	Female	0	0	1	4,8	1	4,8	19	90,5	
Work Attitude	Standard	1	20	2	40	1	20	1	20	0001
	Medium	0	0	0	0	2	33,3	4	66,7	
	High	0	0	0	0	0	0	19	100	
Smoking	Yes	1	12,5	1	12,5	2	25.0	4	50,0	0072
	No	0	0	1	4,5	1	4,5	20	90,9	

The results of bivariate analysis using the Chi-Square test obtained p score = 0.009 for the age variable and $p = 0.001$ for the work attitude variable which means that there is a relationship between age and work attitude with LBP risk marked by p score <0.05 .

3.2 Discussion

The results of the bivariate analysis of all independent variables on the dependent variable indicate that only age and work attitude are associated with the risk of Low Back Pain in broomstick makers in Silau Padang Village, Serdang Bedagai Regency. Based on the observations, it was found that workers have an average age of 30 years and over and work attitudes that are not in accordance with ergonomic theory. This is consistent with research conducted by Sulaeman (2015) which states there is no relationship between work experience, Body Mass Index (BMI), smoking behavior and exercise habits with the incidence of Low Back Pain. Factors that influence the incidence of low back pain are age, years of service and the level of re-exposure.

And reinforced by research Riningrum (2016) states that the cause of LBP is influenced by attitudes and years of service. This is because sitting in a bent and bent position for a long time can cause muscle stiffness and will damage the soft tissue. Incorrect body position when sitting makes abnormal pressure on the tissue, causing pain. Disc pressure is greater in an upright sitting position compared to a standing position and becomes greater when sitting by bending forward.

IV. Conclusion

The age of the broomstick makers poses a risk of back pain because as a person gets older, the endurance of the muscles, bones and support systems of the body will decrease in function so that it can become rigid, narrow and painful as well as non-ergonomic and bad work attitudes which are at high risk for LBP because workers when doing work they do not pay attention to attitude or position when working. Whether it's sitting on the floor or using a small bench without a backrest.

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